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**Single-crystal study of $\text{U}(\text{Co}_{1-x}\text{T}_x)\text{Al}$ compounds
for $\text{T} = \text{Fe}$ and Ni**

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UCoAl exhibits a unique magnetic behavior with a paramagnetic ground state, although the c -axis susceptibility shows a maximum around $T_{\text{max}} \approx 20$ K. The ground state can be easily destabilized towards ferromagnetic ordering of U moments either by applying a c -axis oriented magnetic field ($B_c < 1$ T) or by substituting U, Co or Al by suitable elements. We will present first single-crystal study of $\text{U}(\text{Co}_{1-x}\text{T}_x)\text{Al}$ compounds for $\text{T} = \text{Fe}$ ($x = 0.05$) and Ni ($x = 0.05$ and 0.1). Magnetization (M) and specific-heat (C) measurements were done in the temperature range of 2 – 300 K and in fields up to 12 T. In all cases we have confirmed the strong uniaxial anisotropy with magnetic response concentrated along the c -axis that is typical for UCoAl and its hexagonal UTX counterparts. The Ni substitution yields gradual increase of B_c whereas $\text{UCo}_{0.95}\text{Fe}_{0.05}\text{Al}$ is ferromagnetic below 30 K. To explain these results a scenario will be discussed considering the dual role of $5f - 3d$ hybridisation in the physics of UCoAl (causing a $5f$ moment delocalization and on the other hand, mediating indirect exchange interactions between U moments). A comparative analysis of specific heat data obtained on these compounds and pure UCoAl allow extracting contributions due to spin-fluctuations.